

REMARKS

This is in response to the Office Action dated December 19, 2005. Claims 1-3 are pending.

Claim 1 stands rejected under 35 U.S.C. Section 103(a) as being allegedly unpatentable over Tokumitsu in view of Hoopman. This Section 103(a) rejection is respectfully traversed for at least the following reasons.

Claim 1 requires a combination of both (a) center offset, and (b) larger size of the light-focusing parts moving toward the peripheral region. In particular, claim 1 requires that “the position of the center of each of the light-focusing parts is shifted gradually larger toward the center of the camera region based on the position of each of the light-receiving parts corresponding to the light-focusing parts and the size along the substrate surface in the lateral direction of each of the light-focusing parts becomes gradually larger, as the location of the light-focusing part is getting closer to the peripheral camera region from the middle camera region on the substrate in the front of the exit pupil.”

The cited art fails to disclose or suggest this combination of (a) and (b) referenced above. Tokumitsu discloses a solid state image sensor including photodiodes 3, color filters 2, and microlenses 1. As shown in Figs. 3, 3A, 3B and 3C of Tokumitsu, the centers of the microlenses 1 are shifted by amounts d_a , d_b and d_c toward the periphery of the sensor. In Fig. 3A, the centers of the microlenses 1 are shifted toward the center by amounts d_a and d_b moving toward the periphery of the sensor. Significantly, *Tokumitsu states that the purpose of shifting the centers of the microlenses is to correct the focal points of the lenses* (col. 2, lines 29-31). However, Tokumitsu does *not* disclose or suggest also changing the “size” of the microlenses moving away from the sensor center as called for in claim 1.

In view of the aforesaid flaw in Tokumitsu, the Office Action cites to Hoopman.

Hoopman discloses a microlens array where the focal lengths of the microlenses in the array are shorter at the center of the array than at the periphery of the array. The Office Action contends that it would have been obvious to have used the different focal lengths of Hoopman in the device of Tokumitsu. Importantly, *Hoopman like Tokumitsu states that the purpose of changing size is to correct the focal points of the lenses* (col. 3, lines 32-35; and col. 4, lines 3-11).

In contrast with the cited art, claim 1 requires a *combination* of *both* (a) center offset, and (b) larger size of the light-focusing parts moving toward the peripheral region. Both Tokumitsu and Hoopman fail to disclose or suggest this *combination* of (a) and (b). Moreover, there is nothing in the art of record which would have caused one of ordinary skill in the art to have done *both* (a) and (b) in a particular device. *Both Tokumitsu and Hoopman perform their modification to correct the same problem.* In other words, Tokumitsu performs center offset to correct the focal length problem, and Hoopman performs size adjustment to cure this *same* focal length problem. Once the problem has been solved once, one of ordinary skill in the art would not have tried to solve it again because this would be duplicative and unnecessary. Since Tokumitsu's lens centers have been shifted toward the periphery to solve the focal length problem, there is no reason why one of ordinary skill in the art would have also increased the focal lengths of the lenses toward the periphery as alleged by the Office Action because the problem had already been solved by Tokumitsu's center offset. The shifting of Tokumitsu's lenses alleviates any need to make such a change. Thus, there is simply no suggestion or motivation in the cited art for the combination of (a) and (b) as required by claim 1.

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It is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

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